

May 27, 2009

Mr. Dan Jacquet BLM Carson City District Office 5665 Morgan Hill Road Cason City, Nevada 89701

Re: BLM Carson City Interagency Fire Facility

Dear Dan:

Per our agreement we have prepared the following traffic engineering review of the proposed fire facility. BLM plans to construct a fire facility in the southeast corner of the South Edmonds Drive / Koontz Lane intersection in Carson City, Nevada. The project will be constructed in two phases. Phase one contains a 6,580 square feet Hot Shot operational facility and two 4,290 square feet crew quarter buildings. Phase two contains a 5,018 square feet wildland fire station. Each crew quarter building is designed to include ten single occupancy bedrooms with shared, kitchen, dining, laundry and living areas. The Hot Shot operational facility building contains office areas, training rooms, work stations, fitness areas, showers, tool storage and truck bays. Full floor plans are available for the Hot Shot operational facility only. These plans show that roughly 30% of the building area is designed for office use, roughly 40% as truck bays or tool storage and the remaining 30% is a fitness room with showers.

The Hot Shot fire crews are expected to be in residence only about 60 days each year. Their average fire season is about 160 days. The Hot Shot fire crews are assigned to fire incidents about 100 days each year and are away from the facility. For more than 200 days each year the Hot Shot crews are not assembled. A small staff operates the Hot Shot facility when the crews are assigned to incidents and during the off season. The average fire wildland fire station season is about 182 days. Generally they will be dispatched from this facility each day during this period. The wildland fire crew totals 15 staff during the fire season and 3 staff during the off season. For about 183 days each year the wildland fire crew are not assembled. A 3 person wildland fire staff operates the facility during the off season.

One of the first steps in the review of this project was to seek input from Carson City Public Works staff regarding their requirements for a traffic study. Carson City staff indicated that because of the small size of the facility a traffic study was not required based on city policy.

In order to calculate trip generation totals for the facility we first sought national data for fire stations but were not able to locate any published information. Based on a review of the Environmental Assessment and an understanding of how the facility functions we calculated trip generation by looking at the two types of office operations with the residential functions calculated separately. The phase one fire operations center trip generation is calculated on an office square footage basis with the truck bays and storage areas not expected to generate any trips. The wildland fire facility trip generation is calculated as a general office function on a per employee basis for both the fully staffed period and off season. Trip generation calculations are based upon information taken from the Eighth Edition of *ITE Trip Generation* (2008) for Land Use 710: General Office and 220: Apartment. The apartment trip generation totals have been reduced by 50% because the residents both live and report to work on-site. A summary of the anticipated average daily and peak hour traffic volumes for Solgequi Engineers Ltd. • 715 H Street • Sparks, Nevada 89431 • 775/358-1004 • FAX 775/358-1098

the phase one and phase two buildings is shown below. The study periods include when the Hot Shot crews are in residence at the facility, when they are away and when the wildland fire facility is fully or minimally staffed.

		TRIP G	ENER	ATION			
		AM	[PEA]	K HOUR	PM	PEAR	HOUR
FUNCTION	<u>ADT</u>	<u>IN</u>	<u>OUT</u>	TOTAL	<u>IN</u>	<u>OUT</u>	TOTAL
Phase One with Hot	Shot Crew in	Residence	2				
Hot Shot Office							
1,900 Sq. Ft.	21	3	0	3	0	2	2
Apartments							
20 Persons	33	$\frac{1}{4}$	$\frac{2}{2}$	<u>3</u>	3 3	$\frac{1}{3}$	4
Subtotal	54	4	2	6	3	3	6
Phase One with Hot	Shot Crew O	ıt					
Hot Shot Office							
1,900 Sq. Ft.	21	3	0	3	0	2	2
Apartments		_	•	_	-	_	_
20 Persons	0	<u>0</u>	0	<u>0</u>	<u>0</u>	<u>0</u>	_0
Subtotal	21	3	$\frac{0}{3}$	3	$\frac{1}{0}$	2	2
Phases One and Two Hot Shot Office 1,900 Sq. Ft. Wildland Fire Office 15 Employees Apartments 20 Persons Subtotal Phases One and Two Hot Shot Office 1,900 Sq. Ft. Wildland Fire Office 15 Employees Apartments	21 50 33 104 21 50	3 6 10 ot Crew O	0 1 $\frac{2}{3}$ aut and 0 1	3 7 3 13 Wildland Fire 3 7	0 1 3 4 Crew Ope	$ \begin{array}{c} 2 \\ 6 \\ \hline \frac{1}{9} \\ \text{erating} \\ 2 \\ 6 \end{array} $	2 7 <u>4</u> 13
20 Persons Subtotal	$\frac{0}{71}$	<u>0</u> 9	$\frac{0}{1}$	$\frac{0}{10}$	<u>0</u> 1	<u>0</u> 8	_ <u>0</u>
Phase One and Two Hot Shot Office 1,900 Sq. Ft. Wildland Fire Office 3 Employees Apartments 20 Persons Subtotal	Off Season 21 10 0 31	3 1 <u>0</u> 4	0 0 <u>0</u>	3 1 <u>0</u> 4	0 0 <u>0</u>	2 1 <u>0</u> 3	2 1 <u>0</u> 3

As is shown above, the phase one trip generation ranges from 21 to 54 daily trips depending if the crews are in residence. The phase one and two trip generation similarly ranges from 31 to 104 trips. These trips are expected the distribute 50% to the north on South Edmonds Drive, 40% west on Koontz Lane and 10% south on South Edmonds Drive.

Current traffic volume on South Edmonds Drive is reported to be 8,800 average daily trips in the vicinity of the facility per the Nevada Department of Transportation Annual Traffic Report. In the year 2030 Carson City staff predict that the average daily trip volume at this location will decrease to 4,400 due to changes in the area street network. The phase one project trip assignment on South Edmonds Drive north of the site, amounts to 11 daily trips 85% of the year and 27 trips during the brief period when the crews are in residence. The phase one and two project trip assignment on South Edmonds Drive north of the site amounts to 52 daily trips 15% of the year, 36 trips 35% of the year and 16 trips during the off season 50% of the year. In the worst case the 52 trip total is only a 0.6% increase in current traffic on South Edmonds Drive. With future roadway network changes in the area traffic volume on South Edmonds Drive will be greatly reduced compared with existing traffic volumes.

Truck traffic on South Edmonds Drive has also been reviewed. A Carson City truck ordinance allows local deliveries and truck traffic from business located in the area but restricts through truck traffic. Data from the Nevada Department of Transportation indicates that local street traffic contains 2.93% two axle six tire trucks. 2.93% of 8,800 average daily trip volume equals 258 trucks per day on South Edmonds Drive based on a factoring of the current average daily traffic volume on the street. The Hot Shot fire crew assigned to the phase one facility will have one fire engine that falls in the two axle six tire truck category. They also have three crew hauler vehicles but these do not meet the truck classification. The wildland fire station will have three fire engines. The total of these four trucks is expected to generate about 8 daily trips when both crews are fully operating at the facility. This 8 truck trip total is a 3% increase in two axle truck traffic during 15% of the year and 6 truck trips or a 2% increase in truck traffic for 35% of the year with no regularly scheduled truck traffic from the facility during the off season roughly 50% of the year.

In summary traffic impacts from the facility will be minimal. Trip generation from the facility both when fire crews are in full operation at the site and during the off season is not large enough to trigger the need for detailed traffic engineering review in a traffic impact study per Carson City Development Policy. The facility generates very little traffic more than half of the year.

We appreciate the opportunity to complete this traffic engineering review. We anticipate that it will satisfy your requirements. Please call if you have any questions or comments.

Enclosure
Letters/BLMCarson2

Summary of Average Vehicle Trip Generation For 1.9 Th.Sq.Ft. GFA of General Office Building May 06, 2009

24 Hour	7-9 AM Pk	Hour	4-6 PM	Pk Hour
Volume	Enter	Exit	Enter	Exit
21	3	0	0	2
¥ =	24 hour		Peak Ho	our
	Two-Way Volume	Er	nter	Exit
	5		0	0
	2		0	0
	Two-Way Volume 21	Two-Way Volume Enter 21 3 24 hour Two-Way Volume	Two-Way Volume Enter Exit 21 3 0 24 hour Two-Way Volume Er	Two-Way Volume Enter Exit Enter 21 3 0 0 24 hour Peak Ho Two-Way Volume Enter

Note: A zero indicates no data available. Source: Institute of Transportation Engineers

Trip Generation, 8th Edition, 2008.

Summary of Average Vehicle Trip Generation For 10 Persons of Apartments May 06, 2009

24 Hour	7-9 AM Pk	Hour	4-6 Pi	M Pk Hour
Volume	Enter	Exit	Enter	Exit
33	1=	[®] 2	* 3	1
S	24 hour	9	Peak F	Hour
	Volume	En	iter	Exit
	32		0	0
	31		0	0
	Two-Way Volume	Two-Way Volume Enter 33 1 24 hour Two-Way Volume 32	Two-Way Volume Enter Exit 33 1 2 24 hour Two-Way Volume Enter 32	Two-Way Volume Enter Exit Enter 33 1 2 3 24 hour Peak F Two-Way Volume Enter 32 0

Note: A zero indicates no data available. Source: Institute of Transportation Engineers Trip Generation, 8th Edition, 2008.

Summary of Average Vehicle Trip Generation For 3 Employees of General Office Building May 27, 2009

4 2 2	24 Hour Two-Way	7-9 AM Pk	Hour	4-6 PM	Pk Hour
*	Volume	Enter	Exit	Enter	Exit
Average Weekday	10	1	0	0	1
:*		24 hour		Peak Ho	our
		Two-Way Volume	En	iter	Exit
Saturday		2	·	0	0
Sunday	· · · · · · · · · · · · · · · · · · ·	1		0	0

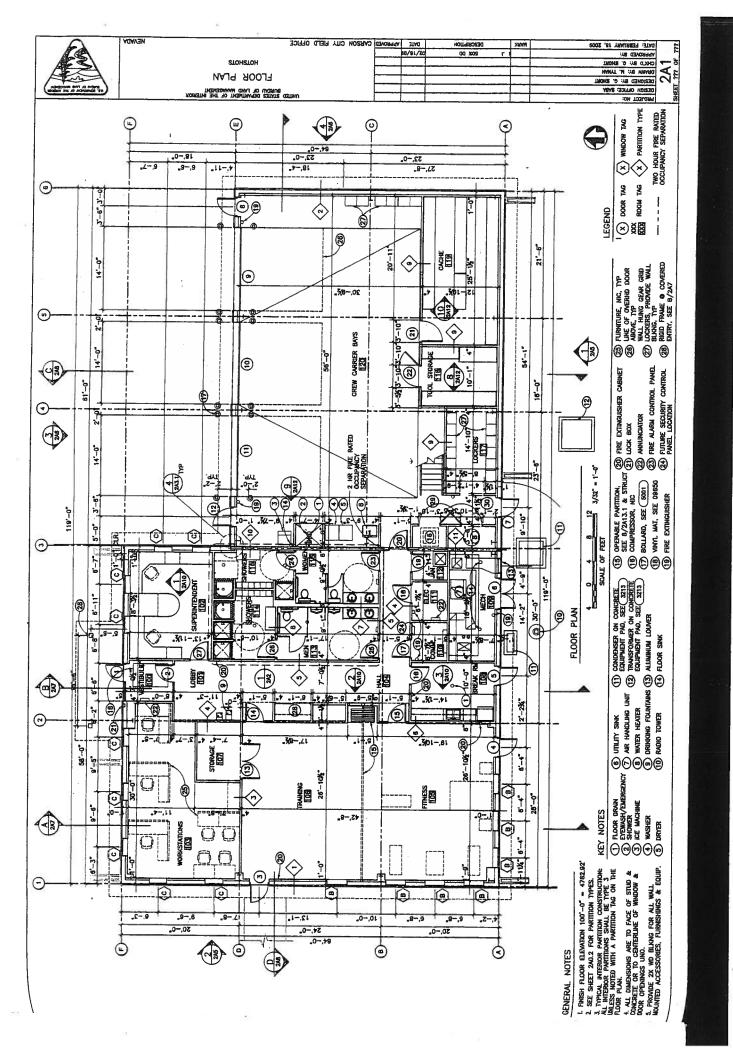
Note: A zero indicates no data available. Source: Institute of Transportation Engineers Trip Generation, 8th Edition, 2008.

Summary of Average Vehicle Trip Generation For 15 Employees of General Office Building May 27, 2009

2 2	24 Hour Two-Way Volume	7-9 AM Pk Enter	Hour Exit	4-6 PM Enter	Pk Hour Exit
Average Weekday	50	6	1	1	6
		24 hour Two-Way Volume	Er	Peak Ho	ur Exit
Saturday		8		1	1
Sunday		3		0	0

Note: A zero indicates no data available. Source: Institute of Transportation Engineers

Trip Generation, 8th Edition, 2008.



VEHICLE DISTRIBUTION and AVERAGE ESAL'S by ROADWAY FUNCTIONAL CLASSIFICATION URBAN

STATE: NEVADA

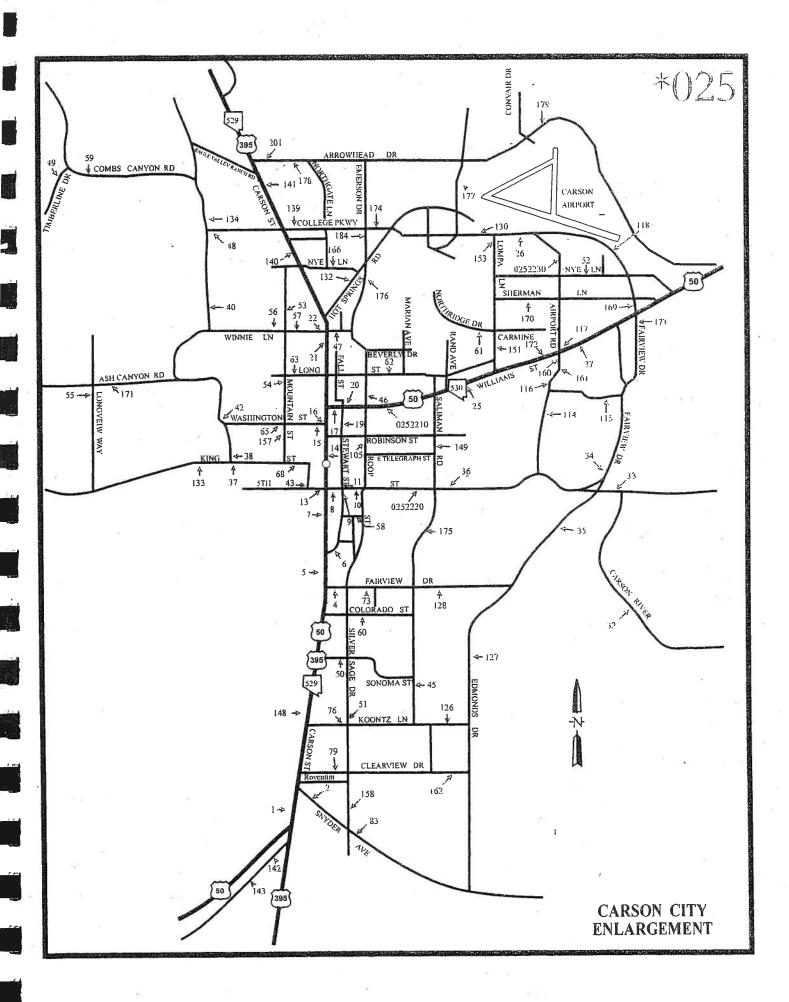
S STATE FIPS CODE:

DATA YEAR: 2007

DATE:

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		PASS			10.00	rek	PERCENT OF TRAVEL	CAVEL					
FUNCTIONAL	TRUCK	ENGER			SINGLE-U	SINGLE-UNIT TRUCKS	SING	SINGLE-TRAILER UNITS	NITS	ШМ	TI TO A IT DO TO		
CLASSIFICATION	PERCENT	N N N N	-		2 AXLE,	3 AXLE	4 AXLE	SAXLE	ZIAYY	TOM L	MOLII-IRAILER TRUCKS	UCKS	
		22.5		BUSSES	6 TIRE	S S	OR		ac	SAALE	6 AXLE	7 AXLE	
	(%(1)	4 TIRE				MORE	LESS		MORE	J FSG		ĕ.	AVERAGE
URBAN												MORE	ESAL
	8.37%	91.63%		0.42%	1.77%	0.62%	0.32%	4 4 10/	0 4 0 6				
FI.EXIBLE ESAL by				0				0/ 1	0.1270	0.30%	0.07%	0.35%	
VEHICLE GROUP				0.812	0.259	0.569	0.617	1.221	1.371	1.558	0.084	2 405	1
KIGID ESAL by				0.024	0000	7				2	0.301	7.185	0.979
OUTBER PREFEVANCE.				170.0	0.220	0.752	0.616	1.837	2.017	1.418	0.866	2.750	1.342
LARICESSWAN	4.88%	95.12%		0.28%	1.63%	0.40%	0.31%	1 62%	%0U U	0 4 20%	0		
FLEXIBLE ESAL by				0 715	0 400	000		2	0.03 /0	0.12%	0.05%	0.38%	
RIGID ESAL by				2	0.130	1.020	0.599	1.191	1.371	1.426	0.761	1.539	0.812
VEHICLE GROUP.				0.746	0.175	1.481	0.588	1.780	2 100	1 305	010		
OTHER PRINCIPAL APPROVATION	5.04%	94.96%		0.60%	4 720/	0 440				2	000.0	2.302	1.107
FLEXIBLE ESAL by				0.00	1.7370	0.41%	0.36%	1.50%	%90.0	0.13%	0.05%	0.20%	
VEHICLE GROUP				1.012	0.269	0.906	1.085	1.223	1.458	2 253	0	000	
MINOR ARTERIALS	4.84%	95.16%		0.48%	2.40%	0.41%	0.440%	9090	2	7.5.00	708.0	1.920	0.890
FLEXIBLE ESAL by			-	0000	000		2	0.03%	0.05%	0.11%	0.06%	0.23%	
VEHICLE UNDUL				0.038	0.239	0.938	0.680	1.285	1.259	2.099	0.593	1 844	0.870
MINOR COLLECTORS	3.50%	%05.96		0.53%	2.20%	0.18%	0.23%	0 14%	0.01%	/800 0			0.0.0
FLEXIBLE ESAL by	,			*	+				0,000	0.00%	0.0%	0.04%	
י בחול בב טאניטוי						k	*	*	*	*	*	*	
LOCAL ROADS	4.51%	95.49%		0.38%	2.93%	0.55%	0.04%	0.46%	0 039/	è			
FLEXIBLE ESAL by				*	*	*	+		0.00	0.01%	0.01%	0.10%	
WHELE SHOEL		_		_	_	-		*	-k	+	1	_	

^{*} Data not available for these Roadway Functional Classifications



State of Nevada Department of Transportation Annual Average Daily Traffic Count Stations

County Name CARSON CITY

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
		AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT
Station	Route / Location							l.	E		
0250063	Long St, 100' E of Mountain St.			1,350	1,200	1.300	1 250	1 200*	1 200		7 000
0250065	SR511, Washington St, 75' E of Richmond Av.	2,700	2,750	2,600	2,500	2.500*	2.550	2,550	2 550	2 250	000'-
0250068	SR512, King St, 120' E of Mountain St.	3,450	3,100	3.250	3.200	3 100	3.450	3.450	2.250	0000	2,300
0250073	Fairview Dr, 100' W of Kansas St.	5,600	5,550	5.500*	5.900	6.500	7 000	7 800	7,550	0,200	3,300
0250076	Koontz Ln, 645' W of Silver Sage Dr./.2 mi E of Carson St.	6,500	6,700	009'9	6,500	6,800	6,450	6,850	6,800	6,950	6.500
0250079	Clearview Dr, 200' W of Silver Sage Dr.	6,200	6,850	7,100	7.200	7.200	7 200*	7.750	7 300	7 550	000
0250083	SR518, Snyder Av, 270' E of Silver Sage Dr.	3,150	3,100	2,700	2,800	2.650	2.600	3 200	2 900	2,850	008,0
0250105	Roop St, 365' S of Robinson St.			11,300	11,300*	13,800	14,000	13,800	13.400	13.600	14 000
0250114	Butti Wy, 175' S of Airport Rd.			3,450	3,500	3,250	3,950	4,400	4,150	4,500	4,600
0250115	Butti Wy, 210' W of Edmonds Dr.			570	290	730	780	760	750	820	770
0250116	Airport Rd, 175' N of Butti Wy.			3,300	3,300*	3,450	3,700	4,100	4,000	4,300	4.400
0250117	SR525, Airport Rd, 325' N of North Champion St.	11,200	9,500	2,600	5,300	5,450	5,450*	7,350	6,100	5,000	4.800
0250118	College Pk, .5 mi N of Nye Ln.			7,100	7,100*	8,500	8,750	009'6	9,300	8,500	7.800*
0250126	Koontz Ln, 50' W of Ragian Cr.	2,300	2,350	2,450	2,300	2,650	2,300	2,550	2,450	2,550	3,100
0250127	S Edmonds Dr, 100'S of Damon Rd,	6,500	6,950	7,250	7,500	7,550	8,100	9,350	9,300*	9,150*	8,800
0250128	Fairview Dr, 300' E of Saliman	3,850	3,800	4,100	4,100	4,800	5,100	5,600	5,200	5,850	5,900*
0250130	SR531, College Pk, 275' W of Lompa Ln.	14,600	14,400	15,800	15,800*	15,800*	16,100*	16,800	16,200	14,800	14,000
0250132	Hot Springs Rd, .1 mi N of US-395 in front of 400 Hotsprings Rd.	7,050	6,500	008'9	000'9	7,350	7,550	8,050	7,250	009'9	6,700
0250133	SR512, Division St, .2 mi W of SR-516 (Ormsby BI).	1,200	1,300	1,450	1,450*	1,650	1,900	1,900	1,750	1.800	1,700
0250134	N Ormsby Bi, .1 mi S of Combs Canyon Rd.	2,250	2,150	2,500	2,400	2,400	2,600*	2,700	2,800	2,700	2.600
0250139	SR531, Coilege Pk, 250' E of Imperial Wy.	13,100	14,100	14,300	14,000	16,400	. 16,700*	16,300	16,400	12,900	12.000
0250140	SR529, Carson St, .1 mi N of Nye Ln.	36,200	34,500	34,500	33,000	34,000	34,500	35,000	34,000	28,800	30.000
0250141	SR529, Carson St, 500' N of Broadleaf Ln.	33,100	32,100	32,500	31,000	32,500	34,000	35,500	37,000	24,900	26,000
0250142	SR705, Clear Creek Rd, .25 mi W of US-395.	540	540	540*	5,900	6,800	6,400	7,450	7,350	7,650	006'9
0250143	SR705, Clear Creek Rd, .25 ml W of Vista Grande Bl.	260	250	220	280	280*	240	290	250	270	280
0250148	SR529, Carson St1 mi N of Koontz Ln.	42,600	41,700	43,500	43,500*	43,500*	47,000	50.500	50,000	44,000	48,000

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ORDINANCE NO. 1998-30

VEHICLE,

RELATED THERETO.

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BILL NO. 125

AN ORDINANCE AMENDING CARSON CITY MUNICIPAL

CODE TO ADD SECTION 10.04.102 (CLASS A VEHICLE) DEFINING A CLASS A VEHICLE, TO ADD SECTION 10.04.104 (CLASS B VEHICLE) DEFINING A CLASS B

VEHICLE) DEFINING A CLASS C VEHICLE, TO AMEND SECTION 10.28.170 (LOAD LIMITS) INCORPORATING

STATE LAW LOAD LIMITS, AND TO ADD SECTION 10.28.180 (TRUCK ROUTE RESTRICTIONS) PROVIDING

THAT CERTAIN STREETS MAY NOT BE USED BY CERTAIN VEHICLES, AND OTHER MATTERS PROPERLY

Fiscal Effect: None

TO ADD SECTION 10.04.106 (CLASS C

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THE CARSON CITY BOARD OF SUPERVISORS DOES HEREBY ORDAIN: 11

SECTION I: 12

That Section 10.04.102 of the Carson City Municipal Code is hereby added as follows:

Any combination of motor vehicles with a gross combination 10.04.102 Class A vehicle. weight rating (GCWR) of 26,001 pounds or more, provided the vehicle being towed has a gross vehicle rating (GVWR) of 10,000 pounds or more.

SECTION II:

That Section 10.04.104 of the Carson City Municipal Code is hereby added as follows:

Any single vehicle with a GVWR of 26,001 or more pounds, or 10.04.104 Class B vehicle. any such vehicle towing a vehicle weighing less than 10,000 pounds GVWR.

SECTION III:

That Section 10.04.106 of the Carson City Municipal Code is hereby added as follows:

Any single vehicle, or combination of vehicles that does not meet 10.04.106 Class C vehicle. the definition of Class A or Class B, but that is placarded for hazardous materials.

SECTION IV:

That Section 10.28.170 of the Carson City Municipal Code is hereby amended as follows:

It is unlawful for any person owning or having control of any truck, 10.28.170 Load limits. [dray] truck tractor, trailer or other vehicle to carry or cause or permit to be carried thereon, along or

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over any highway in Carson City any load exceeding [two thousand pounds per axle, providing the hauling or moving of a single article weighing more than ten thousand pounds shall not be prohibited; and further provided that the provisions of this section shall not apply to any highway designated a state highway where] the statutory load limits of the State of Nevada. [shall be controlling] provided that in accordance with NRS 405.010 and 484.752, the board may direct that a reduced maximum weight limit be posted for any highway, road or portion or structure thereof under its jurisdiction.

SECTION V:

That Section 10.28.180 of the Carson City Municipal Code is hereby added as follows:

10.28.180 Truck route restrictions. The board may adopt a Resolution finding that a specific highway, road or portion thereof, because of its residential character and public safety, is deemed inappropriate to allow Class A, B, and C vehicle through traffic, and may direct that such specific highway, road or portion thereof be designated as a trucks prohibited route. Such prohibited Class A, B, and C vehicle travel shall not apply to school buses, garbage or refuse haulers on assigned routes, or to any restricted class vehicle which may have a local delivery or business within the restricted zone.

SECTION VI:

That no other provisions of Title 10 of the Carson City Municipal Code are affected by this ordinance.

1	PROPOSED this 20th day of August, 1998.	
2	PROPOSED by Supervisor Greg Smith	
3	PASSED on the <u>3rd</u> day of <u>September</u> , 1998.	ees G
4	4 VOTE: AYES: Greg Smith	
5	Jon Plank	9
6	Kay Bennett	
7	7 Tom Tatro, Mayor Pro-Tem	87
8		15.
9	9 NAYS: None	
10	10	
11	ABSENT: Ray Masayko, Mayor	
12	12	8
13	13	
14	14 TPM CHIMA	<u>)</u>
15	Tom Tatro, Mayor Pro-Tem	* * *
16	16 ATTEST:	π, =
17		
18	Alan Glover, Clerk/Recorder	
19	This ordinance shall be in force and effect from and after the	e <u>14th</u> day of
20	•	5.
21	21	
22	22	78 920
23	23	S 48
24	24	2 E
25	25	
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27	27	· **
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VEHICLE CLASSIFICATION SYSTEM

Class "A"

Any combination of motor vehicles with a gross combination weight rating (GCWR) of 26,001 pounds or more, provided the vehicle being towed has a gross vehicle rating (GVWR) of 10,000 pounds or more.

Examples:





Class "B"

Any single vehicle with a GVWR of 26,001 or more pounds, or any such vehicle towing a vehicle weighing less than 10,000 pounds GVWR.

Examples:



Class "C"

Any single vehicle, or combination of vehicles that does not meet the definition of Group A or Group B, but that either is designed to transport 16 or more passengers including the driver, or is placarded for hazardous materials.

Examples:



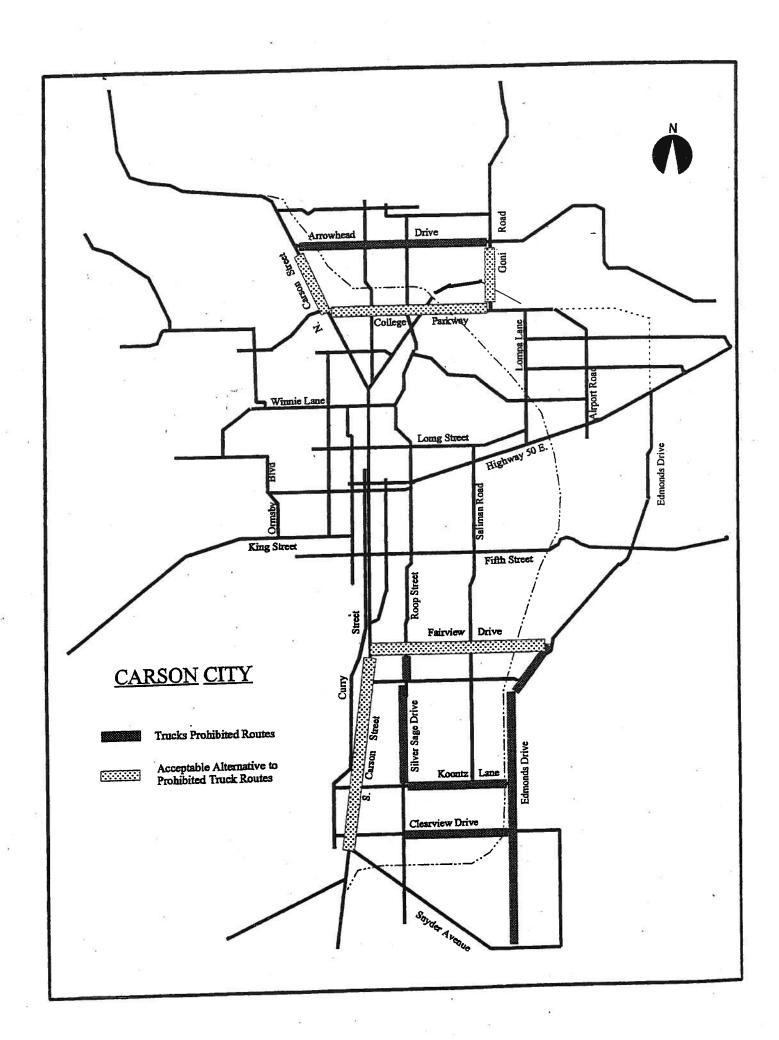


NOTE: A CDL of any class allows you to drive your personal vehicle. You won't need any other licensel. The following are types of endorsements you may need:

- T—Double/triple trailers
- P—Passengers
- N—Tankers
- H—Hazardous materials
- · X-Hazardous materials and tankers

The following restrictions may apply:

- · May not drive vehicle with air brakes unless appropriate knowledge and skills tests are passed.
- · Intrastate only



	airview	Freeway C	omplete
Location	2015	2015	2030
Koontz Ln (Hillview to Edmonds)	1,000	600	1,200
Edmonds Dr (N of Koontz)	8,500	2,570	4,400
Edmonds Dr (S of Koontz)	8,000	2,410	3,600